Building Performance Institute, Inc.

July 15, 2013

Via email to: docket@energy.ca.gov; Docket number 12-EBP-1 "*Comprehensive Energy Efficiency Program for Existing Buildings Draft Action Plan* Staff Workshop"

**RE: Building Performance Institute Comments on Comprehensive Energy Efficiency Program for Existing Buildings (AB758) Draft Action Plan Workshops**

Docket 12-EBP-1
California Energy Commission

Thank you for the opportunity to comment on the *Comprehensive Energy Efficiency Program for Existing Buildings Draft Action Plan (*Draft Action Plan). The California Energy Commission (CEC) held public workshops on the Draft Action Plan on June 24 and 25, 2013, and invited public comments on the workshop and the draft action plan. BPI appreciates this opportunity to comment and we look forward to ongoing participation in the development of AB758 to support and achieve California's strategic goals. We commend the Commission and Energy Division Staff on the tremendous effort of compiling the document and promoting the open discussion of the Draft Action Plan.

BPI is the nation's premier building performance credentialing, quality assurance and standards setting organization. BPI develops technical standards using an open, transparent, consensus-based process built on sound building science, and is accredited as a standards developer by the American National Standards Institute, Inc. (ANSI). More than 130 programs across the U.S. rely on BPI standards and professional credentials as the foundation of their REE, carbon reduction, and weatherization activities including 46 Home Performance with ENERGY STAR® (HPwES) programs, manufacturer high performance programs and manufacturer commissioning. BPI was named in legislation effective July 1, 2013 as a provider of Building Energy Efficiency Rating Systems for the State of Florida.

BPI offers the following:

- national standards to ensure top quality, consistent protocols are being followed throughout the home performance and weatherization industries including technical standards relating to Building Diagnostics, Energy Auditing, Heating, Air Conditioning/Heat Pump, Multifamily Buildings, Manufactured Housing and standards related to data collection, calibration, and transfer protocols;
- certification of individuals in building analysis and auditing, heating, air conditioning/heat pump, shell/envelope, multi-family, and manufactured housing designations, crew management, and quality control inspections;
- accreditation of contracting companies committed to delivering quality home performance improvements;
- quality assurance to verify conformance with BPI Standards and provide feedback for continuing improvement; and
- partnerships with testing organizations that deliver BPI services in their market.



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BPI's comments focus on the missing components in the Draft Action Plan, particularly as they relate to Residential Retrofit aspects that could help create a more vibrant and workable final plan.

**AB758 Mandates a Comprehensive Approach**

The Legislative Counsel's Digest is often quoted as if it were the law. "(1) Existing law requires the State Energy Resources Conservation and Development Commission (Energy Commission), in its biennial energy conservation report, *to report on the progress made to implement a statewide home energy rating program*." (emphasis added). This statement refers to the progress made on implementing a home energy rating up to the point of that report. It does not require establishment of a broader home energy rating program or require implementation of a home energy rating program statewide beyond the bounds previously required. The Digest continues:

> "This bill would require the Energy Commission, by March 1, 2010, to establish a regulatory proceeding to develop a comprehensive program to achieve greater energy savings in the state's existing residential and nonresidential building stock."

The mandate of AB758 is NOT to implement home energy ratings. Rather, the mandate is to achieve energy savings in all existing buildings.

> SEC. 2. Section 25943 is added to the Public Resources Code, to read: 25943. (a) (1) By March 1, 2010, the commission shall establish a regulatory proceeding to develop and **implement a comprehensive program to achieve greater energy savings** in California's existing residential and nonresidential building stock. This program shall comprise **a complementary portfolio of techniques, applications, and practices that will achieve greater energy efficiency** in existing residential and nonresidential structures that fall significantly below the current standards in Title 24 of the California Code of Regulations, as determined by the commission.
> (2) The comprehensive program **may include**, but need not be limited to, a broad range of energy assessments, building benchmarking, energy rating, cost-effective energy efficiency improvements, public and private sector energy efficiency financing options, public outreach and education efforts, and green workforce training. (emphasis added).

In short, AB758 considers ratings to be one among a suite of measures that the CEC may consider appropriate for approval in the portfolio and the type of rating system deployed is purely within the regulatory discretion, but the legislative directive places the emphasis on identifying components of the portfolio including energy assessments, cost-effective improvements, and workforce training that are equal to or more important than ratings. Ratings may have their place in the market, but ratings have been demonstrated in many settings to 1) not improve the energy efficiency of buildings, 2) not drive homeowners to action, and 3) not necessarily result in better performance even when required for new homes.



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The goal of AB758 is to **achieve greater energy savings** and support **practices that will achieve greater energy efficiency**. As BPI noted in its October 23, 2012 comments on the AB 758 Scoping[1], the current rating system does not lead to energy efficiency projects. Neither ratings nor audits in-and-of themselves save energy. Completed projects save energy. Avoiding the need for new energy resources, reducing current energy needs, and ensuring persistent savings will only come from providing home and building owners with a comprehensive set of solutions and the ability to follow through on installation and maintenance recommendations delivered by a network of qualified contractor companies with the ability to carry through and complete improvements, and maintain a relationship with that building and its occupants for the long-term.

Commissioner McAllister's opening message in the Draft Action Plan shows a deep and thorough understanding of both the weaknesses of the current system and the need to change approaches[2]. Embracing the contractors that do the work, and ensuring policies and procedures for program implementation support a viable business model for them is absolutely necessary. Business as usual will not achieve the workforce development, consumer behavior, or implemented retrofit actions necessary to reach California's goals.

**No Regrets Strategy 1: Data Reporting and Management**

CEC understands the need to remove the information barrier and ensure the energy performance data the market needs is collected, organized, analyzed, integrated, and properly put in the hands of the consumers, lenders, market actors, program designers, contractors, and other decision makers to improve response and delivery of energy conservation measures (ECMs).[3] It will be important to align with national standards in this effort to ensure the usefulness of the data to the building performance community at large. The first, most important step for CEC, will be to work with stakeholders and national standards organizations to properly define the necessary use cases (e.g., finance, real estate, energy efficiency programs, demand side management programs) for the data. Then leveraging a common taxonomy, implementing available and accessible data transfer protocols that capitalize on market-based software, and ensuring the building and performance data that is collected can be aggregated in a way that is useful not only to California, but also globally to inform the international community. The international community recognizes that California is larger than most countries, and looks to California for leadership in the energy conservation realm.

Several efforts, including efforts by the California Public Utility Commission (CPUC) are working on data in parallel. BPI has published data standards for data collection and transfer protocols, as well as actual energy use calibration to energy efficiency improvement models, are already in use in several residential energy efficiency markets. These standards are:

- BPI-2200-S-2013 Standard for Home Performance-Related Data Collection
- ANSI/BPI-2400-S-2012 Standard Practice for Standardized Qualification of Whole-House Energy Savings Predictions by Calibration to Energy Use History (The Delta Standard)
- BPI-2100-S-2013 Standard for Home Performance-Related Data Transfer

[1] Building Performance Institute Comments on Comprehensive Energy Efficiency Program for Existing Buildings (AB758) Scoping Report, Submitted October 23, 2012. (2012-10-23 TN-68008).
[22] Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings, California Energy Commission, Efficiency and Renewable Energy Division, June 2013. Unnumbered pages, *Message from Commissioner Andrew McAllister*. CEC-400-2013-006-D
[3] Id. p. 18.



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- BPI- 2101-S-2013 Standard Requirements for a Certificate of Completion for Whole-House Energy Efficiency Upgrades (soon to be available for public comment).

Although not every use case for data collection has been defined, development of use case addenda for specific purposes will be an ongoing effort. As CEC moves forward, its efforts would be best spent working in collaboration with the CPUC and the national standards working groups of diverse and widely experienced experts, than to attempt to perpetuate a stand-alone process. The development must always be done with an eye on the need to support the people actually selling the work needed to reach the goals. Contractors and implementers must be able to integrate data easily into a viable business model that does not require them to waste resources struggling to obtain, manipulate, analyze or share data. Consumers must be able to easily share and promote those completed improvements at the time of sale.

When focusing on meter data collection, whether for modeling of projected improvements or for subsequent analysis of program effectiveness, short-interval data, albeit interesting, is often not necessary. Simply providing quick and easy access to monthly data can be sufficient for many purposes. It is important to remember that need to remember that all data is not created equal, and monthly billing data or non-smart meter data may be sufficient to get actionable information and recommendations in front of the customer, or to support financing decisions, without sharing all available data.

Pre- and post-retrofit data are essential not only for the award of incentives but for the software developers to be able to evaluate both the effectiveness of their models (calibrating to actual utility usage) and for contractors to evaluate the effectiveness of their services, which allows for continuous improvement. Feedback is essential for performance to continue to improve. It should be noted, however, that data is only one piece of the puzzle. Even when disaggregated with reasonably sophisticated software, there is a limit to how much information stand-alone data can provide without touching the home. Although meter data analytics can be useful in identifying target buildings or homes that can benefit from energy efficiency by providing a foot through the door to investigate the high usage, a deep retrofit with deep savings will only occur when somebody sells something.

A true diagnostic evaluation of the home is necessary to develop a comprehensive work scope that addresses real issues and delivers deep and persistent savings. Data-driven information can support increased awareness and some behavior-based participation increases when residents can get accurate information and analysis of their home energy use through a low cost smart meter analysis. As the first step in helping the consumer move to action, data reports can be useful. But analytics should never presume to replace the need to actually improve the parts of the home or building that simply don't work from a performance standpoint. Smart meter data can only disaggregate what the assumptions say *should* exist in the building, and cannot take into account aberrant behavior or unusual loads--such as home salons, power intensive hobbies (e.g., electric kiln), or exotic pet breeding that would otherwise be bundled into residential energy use in a given home (e.g., heating/cooling loads, plug loads, and behavioral loads). A contractor can interview a homeowner, look at the conditions, and with the use of data, determine the best course for changes. Sometimes those savings can be delivered through counseling or addressing the "fruit on the ground", As Devon Hartman said, "Contractors can increase consumer awareness of simple measures to save energy…" and help them take a course of action.



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**No Regrets Strategy 2: Support for Standards Compliance and Enforcement**

Significant challenges are present in the current codes and standards compliance arena. The first is the immense complexity of the code itself, followed by the complexity of the reporting and verification process. Contractors as a rule did not enter their business out of a desire to do paperwork and fill out forms. Forms should be designed with an eye toward feasibility and cost-efficiency in the field--they should be designed with input from contractors that will be required to utilize them.

Fees for permits often exceed the cost of the project, which eliminates the cost-competitiveness of a contractor complying with legal requirements in the face of others who simply ignore the law. CEC should support more rigorous enforcement, up to and including revocation of license for failure to comply; this would aid the cause of the contractors who do comply. Helping the consumer understand the need for compliance, and reminding them of their ultimate responsibility for compliance, would help detract the message of those who won't pull a permit or call for an inspection. CEC can work with local authorities to develop and deploy an aggressive public service campaign to help building owners understand their responsibilities and the potential consequences of working with a below-the-bar contractor. Permit and code kiosks in big-box or hardware supply stores could help consumers find a licensed contractor and at the same time remind them to ensure the bid requires all necessary permits and inspections.

Leveling the playing field for high performing contractors can encourage improved performance, a more comprehensive approach to any type of home improvement, and better compliance with the code and permitting process. CEC should facilitate development with CSLB a special "whole-building" license for those contractors that take a genuine whole-building approach, that use trained and certified staff who have undergone rigorous third-party examination and must meet ongoing continuing education requirements, and that participate in third-party quality assurance. Providing contractors with the option of a single license and a single whole-building retrofit permit at a lower cost than the combined single-measure approach would help incentivize the approach to deep retrofit, without requiring a direct subsidy, while giving the high performance contractors a viable marketing edge over their low-road competitors.

**No Regrets Strategy 4: Foundational Workforce Resources**

CEC should treat residential and commercial/public sectors as different segments. The competencies, skills, and psychometric evaluation is very different in each group. While commercial/public contractors tend to have a strong organized labor approach that lends itself to apprenticeships and long, compensated training models, the residential market is very different. There are some apprenticeship programs around weatherization, most notably in Washington State, but most residential contractors, and particularly retrofit contractors, are small businesses with an average of five employees. Therefore, it is necessary that they be able to add new skills as necessary through means such as independent, intense training courses and on the job mentoring that are not likely to be part of a long-term apprenticeship or traditional two-year community college curriculum. The building blocks for this process should continue to rely on the state's experience and investment in national standards and personal, portable professional credentials at both the individual and company level. CEC should consider how best to leverage and align existing credentials, such as BPI certification, NATE certification, and the new U.S. Department of Energy supported Home Energy Professional certifications between the residential energy efficiency programs and the low-income weatherization programs. Getting weatherization agencies,



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home performance contractors, raters, and even code officials on the same page as to the applicable standards, skills, and techniques would stabilize the approach and provider an easier transition of the workforce between building performance sectors by ensuring they all "speak the same language".

CEC could also encourage the CWIB and its Green Collar Jobs Council to coordinate more actively with state and national contractor organizations such as Efficiency First to provide a broader stakeholder base from those most affected by the requirements for implementing REE.

**Voluntary Pathway 1: Create Multiple Pathways for Residential Property Owners**

Although the deepest energy savings will be obtained from whole-building retrofits, it is understood that at a particular point in time a homeowner or other building owner may not have the time or resources to take a comprehensive approach, and as whole-building retrofits are completed there will be less opportunity for deep savings while particular equipment replacements will still be necessary.

CEC should pursue options for mandating or incentivizing upstream retailers/wholesalers to ensure that energy efficient equipment is available at all times. During an emergency replacement situation, such as a failed water heater or air conditioner, even a well educated consumer will take what is available to get back in service if the a high efficiency unit is not available. This also applies to the contractors who install the equipment or appliances--if they can't access high efficiency equipment in a timely manner, they will do whatever they must to take care of their customer. It is imperative to make it easy for consumers to make the right decision, while making it increasingly difficult to make the wrong decision. This encouragement could take the form of incentives to retailers to stock high efficiency equipment. Potentially, CEC could collaborate with CARB or other agencies to develop methods for discouraging the stocking of low-efficiency equipment or atmospherically drafted combustion appliances that could take the form of a carbon surcharge or some other penalty.

Thank you for your consideration of these recommendations. BPI is committed to a robust, national home performance program that supports both national and local objectives, while ensuring a viable contractor business model that provides persistent, sustainable results for programs and the homeowner.

Respectfully submitted,

Building Performance Institute

By: /s/ Tiger Adolf

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